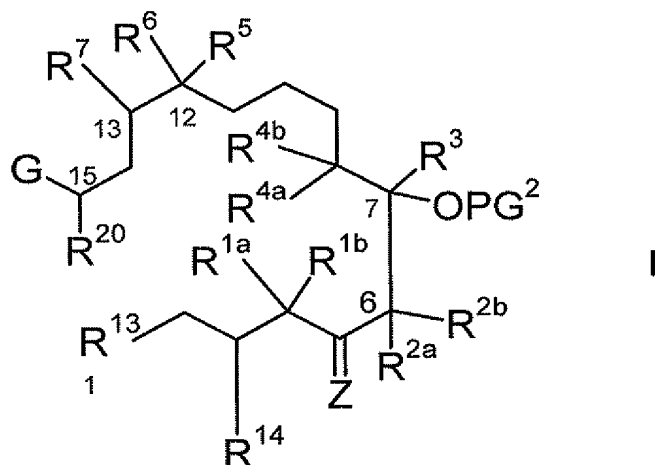


This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently Amended) ~~Process for the production of~~ A process for preparing a  
~~C<sub>1</sub>-C<sub>15</sub>-epothilone fragments of general~~ fragment of formula I,



in which

R<sup>1a</sup>, R<sup>1b</sup> are the same or different and mean hydrogen, C<sub>1</sub>-C<sub>10</sub>-alkyl, aryl,

C<sub>7</sub>-C<sub>20</sub>-aralkyl, or together mean a -(CH<sub>2</sub>)<sub>m</sub> group with m = 2, 3, 4 or 5,

R<sup>2a</sup>, R<sup>2b</sup> are the same or different and mean hydrogen, C<sub>1</sub>-C<sub>10</sub>-alkyl,

C<sub>2</sub>-C<sub>10</sub>-alkenyl, C<sub>2</sub>-C<sub>10</sub>-alkinyl, aryl, C<sub>7</sub>-C<sub>20</sub>-aralkyl or together mean a  
 -(CH<sub>2</sub>)<sub>n</sub> group with n = 2, 3, 4 or 5,

R<sup>3</sup> means hydrogen, C<sub>1</sub>-C<sub>10</sub>-alkyl, aryl, or C<sub>7</sub>-C<sub>20</sub>-aralkyl,

R<sup>4a</sup>, R<sup>4b</sup> are the same or different and mean hydrogen, C<sub>1</sub>-C<sub>10</sub>-alkyl, aryl,

C<sub>7</sub>-C<sub>20</sub>-aralkyl or together mean a -(CH<sub>2</sub>)<sub>p</sub> group with p = 2, 3, 4 or 5,

R<sup>5</sup> means hydrogen, C<sub>1</sub>-C<sub>10</sub>-alkyl, aryl, or C<sub>7</sub>-C<sub>20</sub>-aralkyl,

$R^6, R^7$  each mean a hydrogen atom, together an additional bond or together an oxygen atom,

$G$  means a group  $X=CR^8-$ , or a bicyclic or tricyclic aryl radical,

$R^8$  means hydrogen, halogen,  $C_1$ - $C_{20}$ -alkyl, aryl, or  $C_7$ - $C_{20}$ -aralkyl, which all can be substituted,

$X$  means an oxygen atom, two alkoxy groups  $OR^{23}$ , a  $C_2$ - $C_{10}$ -alkylene- $\alpha, \omega$ -dioxy group, which can be straight-chain or branched, H and  $OR^9$  H/ $OR^9$  or a grouping  $CR^{10}R^{11}$ ,  
whereby wherein

$R^{23}$  stands for a  $C_1$ - $C_{20}$ -alkyl radical,

$R^9$  stands for hydrogen or a protective group  $PG^x$ ,

$R^{10}, R^{11}$  are the same or different and stand for hydrogen, a  $C_1$ - $C_{20}$ -alkyl, aryl, or  $C_7$ - $C_{20}$ -aralkyl radical, or  $R^{10}$  and  $R^{11}$  together with the methylene carbon atom together stand for a 5- to 7-membered carbocyclic ring,

$R^{13}$  means  $CH_2OR^{13a}$ ,  $CH_2$ -Hal, CHO,  $CO_2R^{13b}$ , or COHal,

$R^{14}$  means hydrogen,  $OR^{14a}$ , Hal, or  $OSO_2R^{14b}$ ,

$R^{13a}, R^{14a}$  mean hydrogen,  $SO_2$ -alkyl,  $SO_2$ -aryl,  $SO_2$ -aralkyl or together a  $-(CH_2)_o$  group or together a  $CR^{15a}R^{15b}$  group,

$R^{13b}, R^{14b}$  mean hydrogen,  $C_1$ - $C_{20}$ -alkyl, aryl, or  $C_1$ - $C_{20}$ -aralkyl,

$R^{15a}, R^{15b}$  are the same or different and mean hydrogen,  $C_1$ - $C_{10}$ -alkyl, aryl,  $C_7$ - $C_{20}$ -aralkyl, or together a  $-(CH_2)_q$  group,

o means 2 to 4,

q means 3 to 6,

R<sup>20</sup> means OPG<sup>3</sup>, NHR<sup>29</sup>, or N<sub>3</sub>,

Z means an oxygen atom or H and OR<sup>12</sup> H/OR<sup>12</sup>,

~~whereby~~ wherein

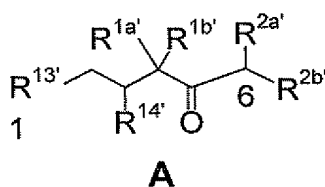
R<sup>12</sup> is hydrogen or a protective group PG<sup>Z</sup>

~~including all stereoisomers as well as mixtures~~ or a stereoisomer or mixture thereof,

and wherein

free hydroxyl groups in R<sup>13</sup> and R<sup>14</sup> can be etherified or esterified, free carbonyl groups in Z and R<sup>13</sup> can be ketalized, converted into an enol ether or reduced, and free acid groups in R<sup>13</sup> ~~and~~ and R<sup>14</sup> can be converted into their salts with bases, ~~characterized in that~~ comprising reacting

a C<sub>1</sub>-C<sub>6</sub> C<sub>1</sub>-C<sub>6</sub> fragment (~~epothilone numbering system~~) of general formula A



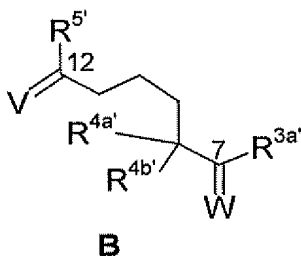
in which

R<sup>1a'</sup>, R<sup>1b'</sup>, R<sup>2a'</sup>, R<sup>2b'</sup>, R<sup>13'</sup> and R<sup>14'</sup> have the meanings ~~already mentioned~~ above for R<sup>1a</sup>, R<sup>1b</sup>, R<sup>2a</sup>, R<sup>2b</sup>, R<sup>13</sup> and R<sup>14</sup>, ~~including all stereoisomers as well as mixtures~~ or a stereoisomer or a mixture thereof, and wherein free hydroxyl groups in R<sup>13</sup> ~~and~~ and R<sup>14</sup> can be etherified or esterified, free carbonyl groups in A ~~and~~ and R<sup>13</sup> can be ketalized, converted

into an enol ether or reduced, and free acid groups in A can be converted into their salts with bases,

is reacted with a ~~C7-C12~~ C<sub>7</sub>-C<sub>12</sub> fragment (~~epothilone numbering system~~) of general formula

B



in which

R<sup>3a'</sup>, R<sup>4a'</sup>, R<sup>4b'</sup> and R<sup>5'</sup> have the meanings ~~already mentioned above~~ for R<sup>3a</sup>, R<sup>4a</sup>,

R<sup>4b</sup> R<sup>4</sup> and R<sup>5</sup>, and

V means an oxygen atom, two alkoxy groups OR<sup>17</sup>, a C<sub>2</sub>-C<sub>10</sub>-alkylene-  
α,ω-dioxy group, which can be straight-chain or branched, or H and OR<sup>16</sup>  
H/OR<sup>16</sup>,

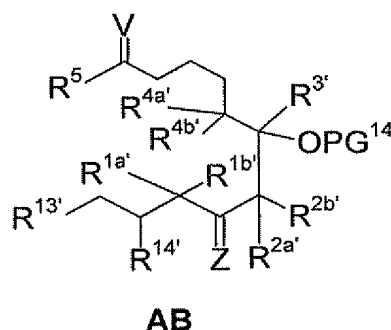
W means an oxygen atom, two alkoxy groups OR<sup>19</sup>, a C<sub>2</sub>-C<sub>10</sub>-alkylene-  
α,ω-dioxy group, which can be straight-chain or branched, or H and OR<sup>18</sup>  
H/OR<sup>18</sup>,

R<sup>16</sup>, R<sup>18</sup>, independently of one another, mean hydrogen or a protective group

PG<sup>1</sup>,

R<sup>17</sup>, R<sup>19</sup>, independently of one another, mean C<sub>1</sub>-C<sub>20</sub>-alkyl,

to form a partial fragment of ~~general~~ formula AB

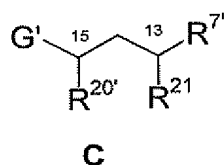


in which

$R^{1a'}$ ,  $R^{1b'}$ ,  $R^{2a'}$ ,  $R^{2b'}$ ,  $R^{3'}$ ,  $R^{4a'}$ ,  $R^{4b'}$ ,  $R^5$ ,  $R^{13'}$ ,  $R^{14'}$ ,  $V$  and  $Z$  have the already-  
mentioned above meanings, and

$PG^{14}$  represents a hydrogen atom or a protective group PG, and

this reacting the partial fragment of general formula AB is reacted with a C13-C15  
C<sub>13</sub>-C<sub>15</sub> fragment (epothilone numbering system) of general formula C



in which

$G'$  has the meaning already mentioned in general formula I above for G, and

$R^{7'}$  means a hydrogen atom,

$R^{20'}$  means halogen,  $N_3$ ,  $NHR^{29}$ , a hydroxy group, a protected hydroxy group

$O-PG^3$ , a protected amino group  $NR^{29}PG^3$ , a  $C_1$ - $C_{10}$ -alkylsulfonyloxy

group, which optionally ~~can be~~ is perfluorinated, a benzyloxy group that is

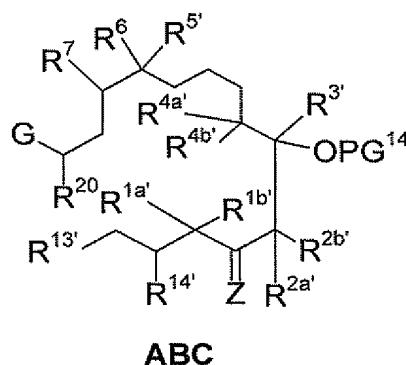
optionally substituted by  $C_1$ - $C_4$ -alkyl, nitro, chlorine or bromine, an

NR<sup>29</sup>SO<sub>2</sub>CH<sub>3</sub> group, an NR<sup>29</sup>C(=O)CH<sub>3</sub> group, or a CH<sub>2</sub>-C(=O)-CH<sub>3</sub> group,

R<sup>21</sup> means a hydroxy group, halogen, a protected hydroxy group OPG<sup>3</sup>, a phosphonium halide radical PPh<sub>3</sub><sup>+</sup>Hal<sup>-</sup> (wherein Ph = Phenyl; and Hal = F, Cl, Br, or I), a phosphonate radical P(O)(OQ)<sub>2</sub> (wherein Q = C<sub>1</sub>-C<sub>10</sub>-alkyl or phenyl) or a phosphine oxide radical P(O)Ph<sub>2</sub> (wherein Ph = Phenyl),

R<sup>29</sup> means hydrogen or C<sub>1</sub>-C<sub>6</sub>-alkyl,

to form a compound of ~~general~~ formula ABC (= compound of general formula I)



in which

R<sup>1a'</sup>, R<sup>1b'</sup>, R<sup>2a'</sup>, R<sup>2b'</sup>, R<sup>3'</sup>, R<sup>4a'</sup>, R<sup>4b'</sup>, R<sup>5'</sup>, R<sup>6</sup>, R<sup>7</sup>, R<sup>13</sup>, R<sup>14</sup>, G and Z have the ~~already mentioned~~ above meanings, and

PG<sup>14</sup> represents a hydrogen atom or a protective group PG.

2. (Currently Amended) ~~Process~~ A process according to claim 1, wherein a compound of ~~general~~ formula I is prepared,

in which

R<sup>1a</sup>, R<sup>1b</sup> are the same and mean C<sub>1</sub>-C<sub>6</sub>-alkyl, or together mean a -(CH<sub>2</sub>)<sub>m</sub> group

with  $m = 2, 3$  or  $4$ ,

$R^{2a}, R^{2b}$  are different and mean hydrogen,  $C_1$ - $C_6$ -alkyl,  $C_2$ - $C_{10}$ -alkenyl,

$C_2$ - $C_{10}$ -alkinyl or  $C_7$ - $C_{20}$ -aralkyl,

$R^5$  means hydrogen, or  $C_1$ - $C_6$ -alkyl,

$R^8$  means hydrogen, halogen, or  $C_1$ - $C_6$ -alkyl,

$R^{15a}, R^{15b}$  are the same or different and mean hydrogen,  $C_1$ - $C_6$ -alkyl, aryl,  $C_7$ - $C_{20}$ -aralkyl, or together mean a  $-(CH_2)_q$  group, and

$q$  means  $3$  to  $6$ ,

is produced.

3. (Currently Amended) ~~Process~~ A process according to claim 1, wherein a compound of ~~general~~ formula I is prepared,  
in which

$R^{1a}, R^{1b}$  are the same and mean  $C_1$ - $C_3$ -alkyl, or together mean a  $-(CH_2)_m$  group

with  $m = 2, 3$  or  $4$ ,

$R^{2a}$  means hydrogen,

$R^{2b}$  means  $C_1$ - $C_5$ -alkyl,  $C_2$ - $C_6$ -alkenyl, or  $C_2$ - $C_6$ -alkinyl,

$R^5$  means hydrogen, or  $C_1$ - $C_3$ -alkyl,

$R^6, R^7$  together mean an additional bond,

$G$  means a group  $X=CR^8$ -, or a bicyclic aryl radical,

$R^8$  means hydrogen, fluorine, chlorine, or  $C_1$ - $C_3$ -alkyl,

$X$  means oxygen or a group  $CR^{10}R^{11}$ ,

R<sup>10</sup> means hydrogen,

R<sup>11</sup> means aryl,

R<sup>13</sup> means CH<sub>2</sub>OR<sup>13a</sup> or CO<sub>2</sub>R<sup>13b</sup>,

R<sup>14</sup> means OR<sup>14a</sup>,

R<sup>13a</sup>, R<sup>14a</sup> together mean a CR<sup>15a</sup>R<sup>15b</sup> group,

R<sup>13b</sup> means hydrogen or C<sub>1</sub>-C<sub>6</sub>-alkyl,

R<sup>15a</sup>, R<sup>15b</sup> are the same and mean C<sub>1</sub>-C<sub>3</sub>-alkyl, or together mean a -(CH<sub>2</sub>)<sub>q</sub>  
group, or

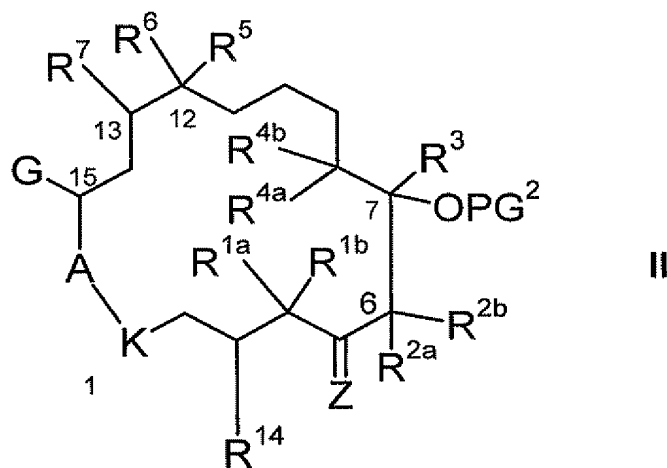
R<sup>15a</sup>, R<sup>15b</sup> are different and mean hydrogen or aryl,

q means 4 or 5, and

Z means oxygen;

~~is produced.~~

4. (Currently Amended) ~~Process A~~ process for the production of preparing an  
epothilone derivatives of general compound of formula II





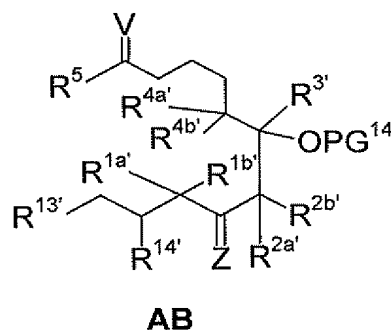
in which substituents  $R^{1a}$ ,  $R^{1b}$ ,  $R^{2a}$ ,  $R^{2b}$ ,  $R^3$ ,  $R^{4a}$ ,  $R^{4b}$ ,  $R^5$ ,  $R^6$ ,  $R^7$ , G,  $OPG^2$  and Z have the meanings that are indicated in general formula I, and

A-K means a group  $-O-C(=O)-$ ,  $-OCH_2-$ ,  $-CH_2C(=O)-$ ,  $-NR^{29}-C(=O)-$ , or  $-NR^{29}-SO_2-$ , wherein

an initial

comprising cyclizing an epothilone product fragment of general formula I that is has  
been obtained by a process according to claim 1 is cyclized.

# 5. (Currently Amended)      Compounds of general A compound of formula AB



in which  $R^{1a'}$ ,  $R^{1b'}$ ,  $R^{2a'}$ ,  $R^{2b'}$ ,  $R^{3'}$ ,  $R^{4a'}$ ,  $R^{4b'}$ ,  $R^5$ ,  $R^{13'}$ ,  $R^{14'}$ , V and Z have the already mentioned meanings

$R^{1a'}$ ,  $R^{1b'}$  are the same or different and mean hydrogen,  $C_1$ - $C_{10}$ -alkyl, aryl,

$C_7$ - $C_{20}$ -aralkyl, or together mean a  $-(CH_2)_m$  group with  $m = 2, 3, 4$  or  $5$ ,

$R^{2a'}$ ,  $R^{2b'}$  are the same or different and mean hydrogen,  $C_1$ - $C_{10}$ -alkyl,

$C_2$ - $C_{10}$ -alkenyl,  $C_2$ - $C_{10}$ -alkinyl, aryl,  $C_7$ - $C_{20}$ -aralkyl or together mean a  
 $-(CH_2)_n$  group with  $n = 2, 3, 4$  or  $5$ ,

$R^{3'}$  means hydrogen,  $C_1$ - $C_{10}$ -alkyl, aryl, or  $C_7$ - $C_{20}$ -aralkyl,

$R^{4a'}$ ,  $R^{4b'}$  are the same or different and mean hydrogen,  $C_1$ - $C_{10}$ -alkyl, aryl,

\_\_\_\_\_  $C_7$ - $C_{20}$ -aralkyl or together mean a  $-(CH_2)_p$  group with  $p = 2, 3, 4$  or  $5$ ,

R<sup>5'</sup> means hydrogen, C<sub>1</sub>-C<sub>10</sub>-alkyl, aryl, or C<sub>7</sub>-C<sub>20</sub>-aralkyl.

R<sup>13'</sup> means CH<sub>2</sub>OR<sup>13a</sup>, CH<sub>2</sub>-Hal, CHO, CO<sub>2</sub>R<sup>13b</sup>, or COHal.

R<sup>14'</sup> means hydrogen, OR<sup>14a</sup>, Hal, or OSO<sub>2</sub>R<sup>14b</sup>.

R<sup>13a</sup>, R<sup>14a</sup> mean hydrogen, SO<sub>2</sub>-alkyl, SO<sub>2</sub>-aryl, SO<sub>2</sub>-aralkyl or together a  
-(CH<sub>2</sub>)<sub>0</sub> group or together a CR<sup>15a</sup>R<sup>15b</sup> group.

R<sup>13b</sup>, R<sup>14b</sup> mean hydrogen, C<sub>1</sub>-C<sub>20</sub>-alkyl, aryl, or C<sub>1</sub>-C<sub>20</sub>-aralkyl, and

PG<sup>14</sup> represents a hydrogen atom or a protective group PG.